



DEPARTMENT OF PERMITTING, ENVIRONMENT, AND REGULATORY
 AFFAIRS (PERA)
 BOARD AND CODE ADMINISTRATION DIVISION
NOTICE OF ACCEPTANCE (NOA)

MIAMI-DADE COUNTY
 PRODUCT CONTROL SECTION
 11805 SW 26 Street, Room 208
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DURO-LAST Roofing, Inc.
525 Morley Drive
Saginaw, MI 48601

SCOPE:

This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed and accepted by Miami-Dade County PERA – Product Control Section to be used in Miami-Dade County and other areas where allowed by the Authority Having Jurisdiction (AHJ).

This NOA shall not be valid after the expiration date stated below. The Miami-Dade County Product Control Section (In Miami-Dade County) and/or the AHJ (in areas other than Miami-Dade County) reserve the right to have this product or material tested for quality assurance purposes. If this product or material fails to perform in the accepted manner, the manufacturer will incur the expense of such testing and the AHJ may immediately revoke, modify, or suspend the use of such product or material within their jurisdiction. PERA reserves the right to revoke this acceptance, if it is determined by Miami-Dade County Product Control Section that this product or material fails to meet the requirements of the applicable building code.

This product is approved as described herein, and has been designed to comply with the Florida Building Code including the High Velocity Hurricane Zone of the Florida Building Code.

DESCRIPTION: DURO-LAST Single Ply PVC Roof Systems over Poured Gypsum Decks.

LABELING: Each unit shall bear a permanent label with the manufacturer's name or logo, city, state, and following statement: "Miami-Dade County Product Control Approved", unless otherwise noted herein.

RENEWAL of this NOA shall be considered after a renewal application has been filed and there has been no change in the applicable building code negatively affecting the performance of this product.

TERMINATION of this NOA will occur after the expiration date or if there has been a revision or change in the materials, use, and/ or manufacture of the product or process. Misuse of this NOA as an endorsement of any product, for sales, advertising or any other purposes shall automatically terminate this NOA. Failure to comply with any section of this NOA shall be cause for termination and removal of NOA.

ADVERTISEMENT: The NOA number preceded by the words Miami-Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the NOA is displayed, then it shall be done in its entirety.

INSPECTION: A copy of this entire NOA shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This NOA renews and revises NOA No. 07-1018.12 and consists of pages 1 through 10.
 The submitted documentation was reviewed by Jorge L. Acebo.



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ROOFING SYSTEM APPROVAL

Category: Roofing
Sub-Category: Single Ply
Material: PVC
Deck Type: Poured Gypsum
Maximum Design Pressure -245 psf

TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT:

TABLE 1

<u>Product</u>	<u>Dimensions</u>	<u>Test Specification</u>	<u>Product Description</u>
Duro-Last Membrane	.037" thick, fabricated in sheets up to 2500 sq. ft.	ASTM D 4434,	PVC polymer blend polyester reinforced roofing membrane: white, tan or gray.
Duro-Last Membrane	.045" thick, fabricated in sheets up to 2000 sq. ft.	ASTM D 4434	PVC polymer blend polyester reinforced roofing membrane: white, tan or gray.
Duro-Last Membrane	.057" thick, fabricated in sheets up to 1800 sq. ft.	ASTM D 4434,	PVC polymer blend polyester reinforced roofing membrane: white, tan or gray.
Duro-Last Accessories	Various	ASTM D-4434	Custom fabricated accessories for parapets and penetrations in the Duro-Last roof.
Duro-Last Fascia Bar	1¾" x 10'; 4" x 10'		Extruded vinyl drip edge with holes punched 8" o.c..
Duro-Last Fascia Bar Cover	1¾" x 10'; 4" x 10'		Extruded decorative cover for Duro-Last Fascia Bar: white, tan or gray.
Duro-Last Fascia	2" & 4"	TAS 111	Kynar finish Galvalume, 24 ga., cover
Duro-Last Snap Coping	12"	TAS 111	Kynar finish Galvalume, 24 ga., coping
Duro-Last 2-Piece Metal "T-Edge"		TAS 111	Kynar finish Galvalume, 24 ga., with vinyl skirt
Duro-Last 2-Piece Compression Edge		TAS 111	Kynar finish Galvalume, 24 ga.
Duro-Last Vinyl Coated Sheet Steel	4' x 10' .043" thick	G-90	G-90 galvanized steel, laminated with Duro-Last Vinyl Film.
Duro-Last Drip Edge	2" face x 10'; 4" face x 10'; 6" face x 5'		Extruded vinyl drip edge with holes punched 8" o.c..



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<u>Product</u>	<u>Dimensions</u>	<u>Test Specification</u>	<u>Product Description</u>
Duro-Last Two-Way Roof Vents			Injection molded two-way roof vents with a Duro-Last membrane skirt.
Duro-Last Gravel Stop	2" face x 10'; 4" face x 10'; 6" face x 5'		Extruded vinyl gravel stop with holes punched 8" o.c..
Roof-Trak Walk Pads	30" x 60" .125" thick		Extruded vinyl walk way pads manufactured from Duro-Last membrane.

APPROVED INSULATIONS:

TABLE 2

Product Name	Product Description	Manufacturer (With Current NOA)
ACFoam II, ACFoam III	Polyisocyanurate foam insulation	Atlas Roofing Corp
ISO 95+ GL	Polyisocyanurate foam insulation	Firestone Building Products
EPS	Type IX Expanded polystyrene with a minimum density of 1.8 pcf	Generic
XPS	Type IV Extruded polystyrene with a minimum density of 1.6 pcf	Generic
Type X Gypsum	Gypsum board	Generic
DensDeck	Silicon treated gypsum	G-P Gypsum
ENRGY-3, ENRGY-3 25 PSI,	Polyisocyanurate foam insulation	Johns Manville
SECUROCK Gypsum-Fiber Roof Board	Fiber reinforced insulation board	USG
H-Shield, H-Shield CG	Polyisocyanurate foam insulation	Hunter Panels
Multi-Max FA-3	Polyisocyanurate foam insulation	Rmax, Inc.



APPROVED FASTENERS:

TABLE 3

Fastener Number	Product Name	Product Description	Dimensions	Manufacturer (With Current NOA)
1.	Duro-Last Duro-Coated Fasteners #14	Roofing and insulation fasteners, Duro-Coated with #3 Phillips head.	Various Lengths	Duro-Last
2.	Duro-Last Steel Plates	Galvalume steel stress plates.	3” square	Duro-Last
3.	Duro-Last Insulation Plates	Round plastic stress plates.	3” round	Duro-Last
4.	Duro-Last Poly-plates	Round plastic stress plates.	2” round	Duro-Last
5.	Duro-Last Liquid Auger Fastener	Composite nylon and fiberglass fastener/plate system with epoxy injection	Various Lengths	Duro-Last
6.	Polymer GypTec	Glass reinforced nylon fastener	Various Lengths	OMG, Inc.
7.	3” GypTec Plates	Galvalume steel stress plates.	3” round	OMG, Inc.
8.	Polymer GypTec Insulation Plate	AZ-55 Galvalume plate for use with the Polymer GypTec fastener.	3” round	OMG, Inc.

EVIDENCE SUBMITTED:

<u>Test Agency/Identifier</u>	<u>Name</u>	<u>Report</u>	<u>Date</u>
Factory Mutual Research Corporation	J.I. 3Y5A6.AM	Class 4470	03-10-95
	4D6A4.AM	Class 4470	08-90-99
	3005604	Class 4470	03-13-00
	3008342	Class 4470	10-19-00
	3030225	Class 4470	06-18-07
	3023458	Class 4450	07-18-06
Exterior Research & Design, L.L.C.	02737.03.05-1	TAS 114 Appendix J	03-21-05
	P6860.06.07	TAS 114, Appendix D	06-08-07
	02742.10.05	TAS 117(A) & (B)	10-12-05
	02732.09.04	ASTM D4434	09-28-04
Trinity ERD	02745.08.06	TAS 117(A)	08-04-06
	02750.02.08-R2	ASTM D4434 / AC75	08-03-12
	D42370.07.12	ASTM D1084 / TAS 117	07-11-12
Intertek Testing Services, NA Inc.	3119586-001	TAS 111	07-10-07



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APPROVED ASSEMBLIES

- Membrane Type:** Single Ply, PVC
- Deck Type 6I:** Poured Gypsum, Insulated
- Deck Description:** Poured Gypsum Concrete
- System Type A:** One or more layers of insulation adhered with approved adhesive, membrane fully adhered.

All General and System Limitations apply.

One or more layers of the following insulations:

Base Insulation Layer (Optional)	Insulation Fasteners (Table 3)	Fastener Density/ft²
ACFoam II, ACFoam III, ISO 95+ GL, H-Shield, H-Shield CG, ENRGY 3, Multi-Max FA-3 Minimum 1.5” thick	N/A	N/A
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
SECUROCK Gypsum-Fiber Roof Board Minimum ¼” thick	N/A	N/A

Note: All insulation shall be adhered to the deck with Tite-Set Insulation Adhesive in 2½-3½” ribbons spaced 12” o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

- Membrane:** Duro-Last membrane adhered to the SECUROCK Gypsum-Fiber Roof Board with Duro-Last WB II Adhesive at a rate of 100 ft²/gal. Laps are sealed with a minimum 1.5” wide heat weld..
- Maximum Design Pressure:** -245 psf (See General Limitation #9)



Membrane Type: Single Ply, PVC
Deck Type 6I: Poured Gypsum, Insulated
Deck Description: Poured gypsum concrete
System Type D(1): All layers of insulation are preliminarily attached to roof deck as specified below. Membrane is mechanically attached to deck through the insulation layers.

All General and System Limitations apply.

Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft ²
ACFoam II, ENRGY-3, ENRGY-3 25 PSI, Approved XPS or EPS Minimum 1" thick	5	1:4 ft ²
	5	1:6.4 ft ²

Note: Insulation layer shall be mechanically attached with fasteners and density described above. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density (See Roofing Application Standard RAS 117 for fastening details).

Vapor Retarders: (Optional) Any UL or FM approved vapor barrier.

Barrier Sheet: Atlas Roofing Corporation FR-10[®], ¼" DensDeck, ½" thick UL Classification Type X Gypsum with a moisture resistant facer and core, or a second sheet of barrier board may be used over the insulation (see General Limitation #1).

Membrane, 57" tabs: Duro-Last membrane shall be mechanically attached at its 6" tabs, spaced every 57" with Polymer GypTec fasteners and Insulation plates spaced 12" o.c. maximum, through the insulation and into the deck. Laps are sealed with a minimum 1.5" wide heat weld.

Membrane, 27" tabs: Duro-Last membrane shall be mechanically attached at its 3" tabs, spaced every 27" with Polymer GypTec fasteners and Insulation plates spaced 18" o.c. maximum, through the insulation and into the deck. Laps are sealed with a minimum 1.5" wide heat weld.

Maximum Design Pressure: -45 psf (See General Limitation #9)



Membrane Type: Single Ply, PVC
Deck Type 6I: Poured Gypsum, Insulated
Deck Description: Poured gypsum concrete
System Type D(2): All layers of insulation and base sheet are mechanically attached to roof deck.

All General and System Limitations apply.

Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft ²
ACFoam II, ACFoam III, ENRGY-3, ENRGY-3 25 PSI, Approved XPS or EPS Minimum 2” thick	N/A	N/A

Note: Insulation layer shall be mechanically attached with fasteners and density described above. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density (See Roofing Application Standard RAS 117 for fastening details).

Membrane, 57" tabs: Duro-Last membrane shall be mechanically attached at its 6" tabs, spaced every 57" with Duro-Last Liquid Auger Fasteners spaced 6" o.c. maximum, through the insulation and into the deck. Minimum fastener resistance is 214 lbf (See General Limitation #6). Laps are sealed with a minimum 1.5" wide heat weld.
(Maximum Design Pressure -45.0 psf; See General Limitation #7)

Duro-Last membrane shall be mechanically attached at its 6" tabs, spaced every 57" with Duro-Last Liquid Auger Fasteners spaced 6" o.c. maximum, through the insulation and into the deck. Duro-Last Tab Sealant 4725 shall be applied over the tab membrane and to the overlying membrane underside at a rate of 60 ft²/gal (two-sided application). Minimum fastener resistance is 285 lbf (See General Limitation #6). Laps are sealed with a minimum 1.5" wide heat weld.
(Maximum Design Pressure -60.0 psf; See General Limitation #7)

Maximum Design Pressure: See fastening above



Membrane Type: Single Ply, PVC
Deck Type 6I: Poured Gypsum, Insulated
Deck Description: Poured gypsum concrete
System Type D(3): All layers of insulation and base sheet are mechanically attached to roof deck.

All General and System Limitations apply.

Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY-3, ISO-95+ GL, Multi-Max FA-3, ACFoam-II, ACFoam-III, Thermarroof Composite-3 Minimum 1.5" thick	N/A	N/A

Note: Insulation layer shall be mechanically attached with fasteners and density described above. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density (See Roofing Application Standard RAS 117 for fastening details).

Membrane, 57" tabs: Duro-Last membrane shall be mechanically attached at its 6" tabs, spaced every 57" with Duro-Last Liquid Auger Fasteners spaced 6" o.c. maximum, through the insulation and into the deck. Duro-Last Tab Sealant 4725 shall be applied over the tab membrane and to the overlying membrane underside at a rate of 60 ft²/gal (two-sided application). Laps are sealed with a minimum 1.5" wide heat weld.

Maximum Design Pressure: -67.5 psf (See General Limitation # 7)



Membrane Type: Single Ply, PVC
Deck Type 6: Poured Gypsum, Non-insulated
Deck Description: Poured gypsum concrete
System Type E: Membrane mechanically attached to roof deck.

All General and System Limitations apply.

Vapor Retarders: (Optional) Any UL or FM approved vapor barrier.

Barrier Sheet: Atlas Roofing Corporation FR-10[®], ¼" DensDeck, ½" thick UL Classification Type X Gypsum with a moisture resistant facer and core, or a second sheet of barrier board may be used over the insulation (see General Limitation #1).

Membrane, 57" tabs: Duro-Last membrane shall be mechanically attached at its 6" tabs, spaced every 57" with Polymer GypTec fasteners and Insulation plates spaced 12" o.c. maximum, into the deck. Laps are sealed with a minimum 1.5" wide heat weld.

Membrane, 27" tabs: Duro-Last membrane shall be mechanically attached at its 3" tabs, spaced every 27" with Polymer GypTec fasteners and Insulation plates spaced 18" o.c. maximum, into the deck. Laps are sealed with a minimum 1.5" wide heat weld.

Maximum Design Pressure: -45 psf (See General Limitation #9)



GENERAL LIMITATIONS:

1. Fire classification is not part of this acceptance, refer to a current Approved Roofing Materials Directory for fire ratings of this product.
2. Insulation may be installed in multiple layers. The first layer shall be attached in compliance with Product Control Approval guidelines. All other layers shall be adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq., or mechanically attached using the fastening pattern of the top layer
3. All standard panel sizes are acceptable for mechanical attachment. When applied in approved asphalt, panel size shall be 4' x 4' maximum.
4. An overlay and/or recovery board insulation panel is required on all applications over closed cell foam insulations when the base sheet is fully mopped. If no recovery board is used the base sheet shall be applied using spot mopping with approved asphalt, 12" diameter circles, 24" o.c.; or strip mopped 8" ribbons in three rows, one at each sidelap and one down the center of the sheet allowing a continuous area of ventilation. Encircling of the strips is not acceptable. A 6" break shall be placed every 12' in each ribbon to allow cross ventilation. Asphalt application of either system shall be at a minimum rate of 12 lbs./sq.
Note: Spot attached systems shall be limited to a maximum design pressure of -45 psf.
5. Fastener spacing for insulation attachment is based on a Minimum Characteristic Force (F') value of 275 lbf., as tested in compliance with Testing Application Standard TAS 105. If the fastener value, as field-tested, are below 275 lbf. insulation attachment shall not be acceptable.
6. Fastener spacing for mechanical attachment of anchor/base sheet or membrane attachment is based on a minimum fastener resistance value in conjunction with the maximum design value listed within a specific system. Should the fastener resistance be less than that required, as determined by the Building Official, a revised fastener spacing, prepared, signed and sealed by a Florida Registered Engineer, Architect, or Registered Roof Consultant may be submitted. Said revised fastener spacing shall utilize the withdrawal resistance value taken from Testing Application Standards TAS 105 and calculations in compliance with Roofing Application Standard RAS 117.
7. Perimeter and corner areas shall comply with the enhanced uplift pressure requirements of these areas. Fastener densities shall be increased for both insulation and base sheet as calculated in compliance with Roofing Application Standard RAS 117 and/or RAS 137. Calculations prepared, signed and sealed by a Florida registered Professional Engineer, Registered Architect, or Registered Roof Consultant **(When this limitation is specifically referred within this NOA, General Limitation #9 will not be applicable.)**
8. All attachment and sizing of perimeter nailers, metal profile, and/or flashing termination designs shall conform with Roofing Application Standard RAS 111 and applicable wind load requirements.
9. The maximum designed pressure limitation listed shall be applicable to all roof pressure zones (i.e. field, perimeters, and corners). Neither rational analysis, nor extrapolation shall be permitted for enhanced fastening at enhanced pressure zones (i.e. perimeters, extended corners and corners). **(When this limitation is specifically referred within this NOA, General Limitation #7 will not be applicable.)**
10. All products listed herein shall have a quality assurance audit in accordance with the Florida Building Code and Rule 9N-3 of the Florida Administrative Code.

END OF THIS ACCEPTANCE



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